

## **Soil and Water Remediation, Groundwater/Vadose Zone (RL-0030)**

**R. T. Wilde, Vice President of Solid and Waste  
Water Remediation/Groundwater Vadose Zone  
and Waste Sampling and Characterization  
Facility/(509) 372-8123**



***Extracting water to mix with apatite materials***

## Overview

This section addresses Project Baseline Summary (PBS) RL-0030, *Soil and Water Remediation Groundwater/Vadose Zone*.

NOTE: Unless otherwise noted, all information contained herein is as of the end of May 2006.

## Notable Accomplishments

**Well Drilling:** To date, 15 of 15 proposed CY 2006 Tri-Party Agreement (TPA)-required wells have been drilled and accepted. This includes four Low Level Burial Ground (LLBG) wells. Ten of fifteen proposed TPA wells for CY 2007 have been accepted. Four of these accepted wells were drilled in the 300-FF-5 Groundwater Operable Unit. The drilling contract was issued for three 200-ZP-1 wells, with drilling expected to start in June. Planning is underway for drilling two wells to support Pacific Northwest National Laboratory (PNNL) bioremediation studies at 100-H and 15 Direct Push Technique (DPT) pushes at 300-FF-5.

**Clean Up Chromium Along the River:** In the 100-H Area, chromium concentrations declined to below the remediation goal of 20 micrograms/liter ( $\mu\text{g/L}$ ) in all wells at the end of May. One well did show a significant increase to 67  $\mu\text{g/L}$  the middle of the month before declining rapidly to below 20  $\mu\text{g/L}$  by the end of the month. One plausible explanation for this increase is that higher Columbia River levels may have saturated deep chromium in the vadose due to higher groundwater levels.

The apatite chemical injection pilot test at 100-NR-2 was initiated on May 31, 2006. A total volume of 100,000 gallons of a dilute calcium citrate/sodium phosphate solution was successfully injected. Post-injection monitoring will continue through mid-June to evaluate apatite formation, and to determine operating conditions for injecting the 300-ft barrier.

**Decommissioning Old, Unused Wells:** Decommissioning of 63 wells using mechanical casing perforation techniques was initiated near the end of April. By the end of May, 75 percent of the wells were completed. The work is planned for completion by the end of June.

**New Funding to Aggressively Address Contamination in Groundwater:** Word was received from EM-21 that the five initial proposals were approved. FH has submitted a Request for Services to receive authorization to spend the money. The five proposals are below; the first two are assigned to FH and the last three to PNNL.

- Augmentation of the In-Situ Redox Manipulation (ISRM) barrier using micron-sized iron
- Testing the use of electrocoagulation to treat chromium in the groundwater
- Testing phytoremediation for Sr-90
- Testing phosphate infiltration at 100-N
- Testing polyphosphate for stabilization of uranium at 300-FF-5

A proposal was submitted to EM-21 to investigate the chromium source for the ISRM plume. This was submitted in conjunction with a proposal from PNNL for evaluating the geochemistry of chromium in the vadose zone.

## FY 2006 Funds vs. Spend Forecast (\$M)

	Projected FY 2006 Funding	FY 2006 Fiscal Year Spend Forecast	Variance
Soil & Water Remediation, Groundwater/Vadose Zone	\$ 48.0	\$ 48.7	\$ -0.6

## FY 2006 Schedule/Cost Performance (\$M)

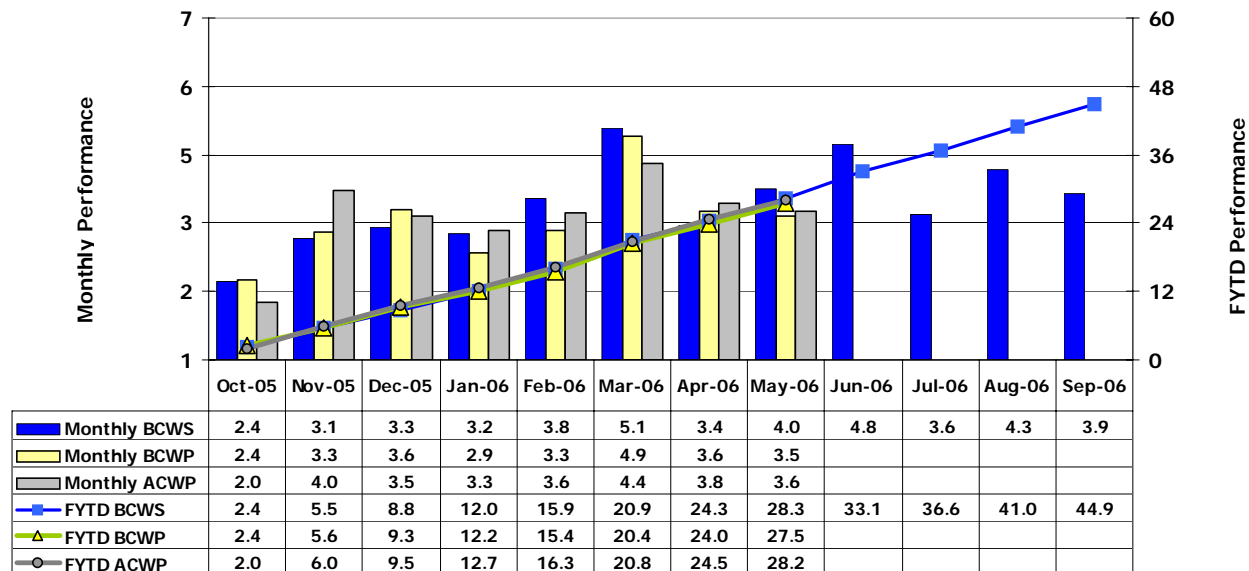
	Budgeted Cost of Work Scheduled	Budgeted Cost of Work Performed	Actual Cost of Work Performed	Schedule Variance \$	Schedule Variance %	Cost Variance \$	Cost Variance %	Budget At Completion
Soil & Water Remediation, Groundwater/ Vadose Zone	\$28.3	\$27.5	\$28.2	-\$0.8	-2.8%	-\$0.7	-2.4%	\$44.9

Numbers are rounded to the nearest \$0.1M and include the Closure Services allocation.

**Schedule Performance (-\$0.8M/-2.8%).** Variance within threshold; no explanation required.

**Cost Performance (-\$0.7M/-2.4%).** Variance within threshold; no explanation required.

### Performance Analysis FYTD and Monthly (\$M)



## Milestone Achievement

Number	Milestone Title	Type	Due Date	Actual Date	Forecast Date	Status/Comments
M-24-57G	Install a Cumulative of 45 Wells by December 31, 2005	RL	12/31/05	8/16/05		Complete
M-24-57J	Install a Cumulative of 45 Wells by December 31, 2006	RL	12/31/06	5/11/06		Complete
M-15-48A	Submit Draft A 200-ZP-1 CERCLA Remedial Investigation Report to EPA	RL	5/31/06	5/31/06		Complete